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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,561	09/29/2003	Mats Larsson	004501-742	1495

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EXAMINER

LE, JOHN H

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

(H-2)

<b>Office Action Summary</b>	<b>Application No.</b> 10/671,561	<b>Applicant(s)</b> LARSSON ET AL.	
	<b>Examiner</b> John H. Le	<b>Art Unit</b> 2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-14 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

1. This office action is in response to applicant's amendment received on 05/01/2006.

Claims 1 and 9 have been amended.

Claims 13-14 have been added.

***Specification***

2. The disclosure is objected to because of the following informalities:

The claimed language in the specification must be avoided as "claims 1, 9, and 10" (see the specification, page 1, lines 16-17), "claims 1, 9, and 10" (see the specification, page 4, line 3), "claim " (see the specification, page 6, line 1).

Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

Claim 13, lines 2-3, "displaying changes in the equivalent circuit based on the computed values of impedances" is not described in the specification.

Claim 14, lines 3-4, "displaying changes in the equivalent circuit based on the computed values of impedances" is not described in the specification.

***Drawings***

3. Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 1 is directed to a method, which does not produce any tangible result. Therefore, claim 1 appears non-statutory.

Claims 2-14 are rejected under 35 U.S.C. 101 base on dependency.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 9-10 are rejected under 35 U.S.C. 103(a) as obvious over Rehtanz et al. (US 2003/0040846).

Regarding claim 1, Rehtanz et al. disclose a computer-implement method for determining parameters of an equivalent circuit representing a transmission section of an electrical network (e.g. abstract, [0032]), wherein the transmission section is represent able as having at least two interfaces (8) with other sections of an electrical network (Fig. 1, Col.14, lines 43-Col.15, lines 20); determining, for each of the interfaces (145, 147)(Fig.4, [0024], [0032]), a voltage phasor at the interface and a phasor of a current flowing through the interface (e.g. Fig.1, [0024]-[0025]), the measurements at the different interfaces being made essentially simultaneously (e.g. [0032]-[0033]).

Although Rehtanz et al. is silent on the teaching of computing, from said voltage and current phasors, values of impedances constituting the equivalent circuit, however it would have been obvious to one of ordinary skill at the time the invention was made to teach steps of computing, from said voltage and current phasors, values of impedances constituting the equivalent circuit for purpose of providing a method of determining parameters of an equivalent circuit in an electrical network since the behavior of neighboring networks connected to the network under consideration by interface lines 8 is modeled by static or dynamic relationships such as constant power or current on the interface line, representation as constant impedance or as a Thevenin equivalent of the neighboring network ([0032]).

Regarding claim 9, Rehtanz et al. disclose computer program for determining parameters of an equivalent circuit representing a transmission section of an electrical

network, which is loadable and executable on a data processing unit (e.g. abstract, [0032], [0068]-[0073]).

Regarding claim 10, Rehtanz et al. disclose data processing system for determining parameters of an equivalent circuit representing a transmission section of an electrical network (e.g. abstract, [0032], [0068]-[0073]).

8. Claims 2, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rehtanz et al. (US 2003/0040846) in view of Gyugyi et al. (USP 5,198,746).

Regarding claims 2 and 7, Rehtanz et al. fail to teach the transmission section is a transmission corridor having exactly two interfaces to other sections of the network ; and at least one interface comprises at least two physical power lines and the voltage phasor at the interface is determined as a weighted sum of the voltages at the power lines.

Gyugyi et al. disclose the transmission section is a transmission corridor (e.g. Col.1, lines 16-19) having exactly two interfaces to other sections of the network (Col.14, lines 43-46, lines 63-68, Col.15, lines 1-4, lines 10-11) and at least one interface comprises at least two physical power lines (e.g. Fig.4), and the voltage phasor at the interface is determined as a weighted sum of the voltages at the power lines (e.g. Col.15, lines 41-48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the transmission section is a transmission corridor and and at least one interface comprises at least two physical power lines and the voltage phasor at the interface is determined as a weighted sum of the voltages at the power

Art Unit: 2863

lines as taught by Gyugyi et al. in a computer-implement method for determining parameters of an equivalent circuit of Rehtanz et al. for the purpose of providing a transmission line impedance compensation system (Gyugyi et al., Col.3, lines 18-23).

Regarding claim 4, Rehtanz et al. disclose the transmission network is represented by a T-equivalent circuit (e.g. [0032]).

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rehtanz et al. (US 2003/0040846) in view of Pradhan et al. (USP 3,883,724).

Regarding claim 6, Rehtanz et al. fail to disclose the equivalent circuit comprises line impedances interconnecting the interfaces and shunt impedances connecting the interfaces to a common node.

Pradhan et al. disclose the equivalent circuit comprises line impedances interconnecting the interfaces and shunt impedances connecting the interfaces to a common node (e.g. Fig.1, Col.3, lines 55-60, Col.4, lines 16-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the transmission network is represented by a T-equivalent circuit as taught by Pradhan et al. in a computer-implement method for determining parameters of an equivalent circuit of Rehtanz et al. for the purpose of providing speed and computational improvements are achieved by representing most or all of the actual power system components through analog simulation (Pradhan et al., Col.2, lines 50-52).

Art Unit: 2863

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rehtanz et al. (US 2003/0040846) in view of Gyugyi et al. (USP 5,198,746) as applied to claims 1-2 above and further in view of Lof et al. (USP 6,476,521).

Regarding claim 3, the combination of Rehtanz et al. and Gyugyi et al. discussed supra, discloses the claimed invention except a first interface connects the transmission corridor to a network section consisting predominantly of power generators, and a second interface connects the transmission corridor to a network section consisting predominantly of power consumers.

Lof et al. teach a first interface connects the transmission corridor to a network section consisting predominantly of power generators, and a second interface connects the transmission corridor to a network section consisting predominantly of power consumers (e.g. Fig.8, Col.18, lines 8-21, Col.20, lines 36-53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the interfaces connects the transmission corridor to a network section consisting predominantly of power generators as taught by Lof et al. in a computer-implement method for determining parameters of an equivalent circuit of Rehtanz et al. in view of Gyugyi et al. for the purpose of providing a system protection scheme for improved detection and damping of power system oscillations (Lof et al., Col.4, lines 28-30).

### ***Response to Arguments***

11. Applicant's arguments filed 05/01/2006 have been fully considered but they are not persuasive.



-Applicant argues that the prior did not teach "determining, for each of the interfaces, a voltage phasor at the interface and a phasor of a current flowing through the interface, the measurements at the different interfaces being made essentially simultaneously, and computing, from said voltage and current phasors, values of impedances constituting the equivalent circuit" as cited in claim 1.

Examiner position is that Rehtanz et al. teach steps of determining, for each of the interfaces, a voltage phasor at the interface and a phasor of a current flowing through the interface, the measurements at the different interfaces being made essentially simultaneously, and computing, from said voltage and current phasors, values of impedances constituting the equivalent circuit as discussed above.

### ***Conclusion***

12. Specifically Rehtanz et al. has been added to other ground of rejection.

### ***Contact Information***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H. Le whose telephone number is 571 272 2275. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571 272 2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

Art Unit: 2863

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le

Patent Examiner-Group 2863

June 9, 2006



MICHAEL NGHIEM  
PRIMARY EXAMINER